

Application No. 10/656,503
Docket No. 200310119-1

REMARKS

Claims 1-25, 33-36, and 38-41 are pending in the present application. Claims 26-32 are withdrawn subject to a restriction requirement and claim 37 is canceled. Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action of July 21, 2008, the following actions were taken:

(1) Claims 1, 4-10, 12-15, and 39-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over RD 39219 and JP 58-008357, in view of U.S. Published Application No. 2001/0039895 of Kawauchi et al. ("Kawauchi") and/or U.S. Patent No. 5,470,816 to Satake et al. ("Satake");

(2) Claims 1, 4-10, 12-15, 17, 20-22, 24, 25, and 39-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over RD 39219 and JP 58-008357 in view of U.S. Patent No. 5,362,536 to Fleming et al. ("Fleming '536") or WIPO Published Application No. WO 03/032299 of Anderson et al. ("Anderson");

(3) Claims 1, 4-15, 17, 20-25, and 39-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over RD 39219 and JP 58-008357 in view of Fleming '536 and Anderson in further view of U.S. Patent No. 5,236,884 to Boggs et al. ("Boggs");

(5) Claims 1-10, 12-22, 24, 25, and 39-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over RD 39219 and JP 58-008357, combined with Fleming and Anderson in view of either U.S. Patent No. 2,957,004 to Perkins et al. ("Perkins") or U.S. Patent No. 4,284,704 to Fleming et al. ("Fleming '704"); and

(6) Claims 1-10, 12-22, 24, 25, 33-36, and 38-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over RD 39219 and JP 58-008357, combined with Fleming '536, and Anderson and either Perkins or Fleming '704, further in view of U.S. Patent No. 4,508,811 to Gravsteijn et al. ("Gravsteijn") and Melles Griot Catalog (1995/96) pp. 49-4 through 49-5.

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Claim Rejections - 35 U.S.C. § 103

The Examiner has rejected all of the presently pending claims under 35 U.S.C. § 103(a) over a number of references in combination. The Applicant respectfully submits that these claims are patentable over the cited references for the reasons set forth below, and that the rejection should be withdrawn.

Before discussing the obviousness rejections herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to the MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing the prior art reference, or references combined, teach or suggest all the claim limitations in the instant application. The Applicant respectfully asserts the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in any of the rejections.

All of the 103 rejections are based on combinations of references using RD 39219 and JP 58-008357 as primary references in combination with or in view of other references. RD 39219 introduces an imaging medium for thermal imaging applications with near infrared radiation. The medium includes 1,3-diiminoisoindoline and/or a related phthalocyanine precursor material, a thermally cleavable adduct capable of generating a phenolic compound with reducing properties, and a near infrared absorbing dye. RD 39219 also lists binders as a possible addition to the composition. JP 58-008357 appears to be largely cumulative to RD 39219 with respect to relevant points. This reference is related primarily to a heat sensitive copying paper. In the specification, particularly the examples, the compositions are described as being heated to 150°C, where color change was noted. Similar to RD 39219, JP 58-008358 does not teach or suggest extremely fast development times as required by the currently pending claims, nor does JP 58-008358 teach the use of an infrared radiation spot size within the range of about 1 to 200 micrometers.

The present independent claims 1, 16, 17, and 33 each require a color forming composition configured for development in less than about 1 msec when exposed to about 30 – 50 mW IR at a spot size from about 1 – 200 micrometers. As the Examiner has acknowledged, this recitation goes to the sensitivity of the composition. More specifically, the sensitivity of the composition requires careful selection of composition components and quantities. As such, it is

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a limitation of each of these claims, and it must be disclosed or inherent in the cited prior art before a *prima facie* case for obviousness based thereupon can be supported. As the Applicant has stated above, the cited references do not teach a color forming composition so configured. In the Office Action of January 28, 2008, the Examiner argued that the teaching of IR absorber present in amounts of ~4% would "inherently sensitize the compositions within the bounds of the claims." Applicant submits that the Examiner has provided insufficient support for this conclusion. Furthermore, as the sensitivity of the composition can depend on the type and amount of the components in the composition, merely pointing to an amount of an IR absorber without consideration of the exact chemical structure of the absorber, and further without consideration of the amounts of other components in the composition, does not reflect on the sensitivity of the color forming composition as a whole.

Those having skill in the art will appreciate that the sensitivity of such color forming compositions is a function of a number of factors, including the nature and properties of the infrared absorber, phthalocyanine precursor, and binder, as well as the relative concentrations of each. This concept is supported in the Applicant's specification. See e.g. paragraphs 0053-0055. One skilled in the art will also recognize that not every formulation based on a combination of components will exhibit the same sensitivity and therefore the same development time. Given a particular combination of components, one skilled in the art may create a number of formulations exhibiting a given response time to a given set of radiation parameters, where the response time is achievable by adjusting relative proportions of the components based upon their individual properties. Similarly, one may use the same approach to formulate compositions having different sensitivity characteristics. It is these adjustments to which the term "configured" refers in claims 1, 16, 17 and 33. As is consistent with the plain and ordinary meaning, the term "configured" as recited in the present claims refers to the purposeful selection, placement and/or design to effectuate a predetermined function or purpose or quality. Therefore, configuring something to do something requires first, an identified objective or purpose, and second, selection and combination consistent with the design to reach the purpose or objective. As such, the recited sensitivity characteristics are a limitation on the scope of the claim that alerts one skilled in the art as to which of the many possible configurations are encompassed by the present claims.

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The recited sensitivity of the claims is very specific to performance characteristics of the composition, as recited in claim 1, requiring the composition be configured for development in less than about 1 msec when exposed to about 30 mW to about 50 mW of infrared radiation at a spot size from about 1 μm to about 200 μm . In the Office Action of January 28, 2008, the Examiner argues that "precursors relied upon from 2772284 (sc prepub at [0034]) are disclosed as being converted to the phthalocyanine by heating at 200 degrees for fifteen minutes (4/38-45 of 2772284)." However, the Applicant submits that heating for fifteen minutes equates to 900,000 msec, which is greatly more than the "about 1 msec" required by the present claims. The substantial difference between development times translates into quite different potential applications. Furthermore, the vast development time between the two teaches away from a composition configured for development in less than about 1 msec. The present claims require a much more sensitive composition, where the sensitivity is particular to specific conditions. The prior art, both properly and improperly cited by the Examiner, fails to teach a composition including the configuration for development in less than about 1 msec when exposed to about 30 mW to about 50 mW of infrared radiation at a spot size from about 1 μm to about 200 μm .

Another point to consider is that in order to render the present claims obvious, the cited prior art must teach each and every element of those claims, either expressly or inherently. As stated before, the sensitivity of color forming compositions is not expressly disclosed in the cited references. As for the alleged inherent disclosure of this limitation, the Federal Circuit is clear regarding inherent limitations. The courts have said that "extrinsic evidence must make it clear that the missing descriptive matter was necessarily present in the thing described in the reference and that it would be so recognized by persons of ordinary skill." *In re Robertson*, 169 F.3d 743 (Fed Cir. 1999). Absent such evidence, a rejection based on inherency cannot be maintained. In light of the discussion above, Applicant submits that a reference or combination of references that only provides the components of the composition without teaching the sensitivity characteristics cannot be said to expressly or inherently disclose those characteristics.

The Examiner also argues that the present claims seek coverage that is not commensurate with the scope of coverage sought. See Final Office Action, dated July 21, 2008, page 7. However, the Applicant submits that the present claims are fully supported by the Examples and notes that the Examiner has not rejected the present claims under 112. As such, the Applicant

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submits that enablement is not an issue in the present prosecution. Regardless, the Applicant submits that the subject matter of the present claims has been exemplified. Therefore, the Applicant submits that the present claim elements describe Applicant's invention commensurate with the present disclosure.

Additionally, the Applicant contends that the present rejections are based on impermissible hindsight. The court has stated that the Applicant's specification cannot be used as a roadmap, i.e., no hindsight reconstruction. Specifically, the court in McNeil-PPC, Inc. v. Perrigo Co., 516 F. Supp. 2d 238, 248 (S.D.N.Y. 2007), affirmed that

the claimed invention as a whole must be compared to the prior art as a whole, Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1383 (Fed. Cir. 1986); Hodosh v. Block Drug Co., 786 F.2d 1136, 1143, n.5 (Fed. Cir. 1986), and courts must avoid aggregating pieces of prior art through hindsight which would not have been combined absent the inventors' insight, KSR, 127 S. Ct. 1727, [WL] at *16. Accordingly, if a prior art reference is sought to provide a specific element of a claim with the use of hindsight, any rejection based thereon is improper and should be withdrawn. The Applicant submits that without the present inventor's insight, the present color forming composition being configured for development in less than about 1 msec when exposed to about 30 mW to about 50 mW of infrared radiation at a spot size from about 1 μm to about 200 μm was not known.

As such, the Applicant submits that the combinations of cited references does not teach each and every element and submits that the present invention was not known absent the inventor's insight. Therefore, the Applicant respectfully requests that the Examiner withdraw the present rejections.

As the Examiner has cited the combination of RD 39219 and JP 58-008357 in view of additional references, such combinations are specifically addressed as follows.

Rejections based on RD 39219 and JP 58-008357, in view of Kawauchi and/or Satake
Claims 1, 4-10, 12-15, and 39-41 were rejected as unpatentable over the noted combination of references. Kawauchi teaches the use of pigments or dyes absorbing infrared light or near infrared light being particularly preferable in the planographic printing plate precursor due to their suitability for use with a laser emitting infrared or near infrared light. Kawauchi teaches simply that a variety of dyes and pigments are capable of absorbing infrared or

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near infrared light. [0087-0088]. The reference further teaches the optional use of a near infrared-absorbing sensitizer. [0089]. Kawauchi discloses including light-heat converting agents added in a ratio of 0.01 to 50% by weight relative to the total solids in the photosensitive composition, and further from 1 to 50% by weight relative to an amount of cyanine dye, which is the main light-heat converting agent. [0090].

Satake teaches thermal recording sheet having a thermal layer containing a dye precursor and a color developer retractable with the dye precursor upon heating to develop a color.

Abstract. A dimerized or trimerized urea compound is utilized as the color developer to obtain a thermal recording sheet having a reversible recordability. **Abstract.** The reference further discloses an optical absorbent included in a coating color in an amount of about 5% in Example 71, which includes 3-N,N-diethylamino-6-methyl-7-anilinofluorane as a dye precursor, and bis-dithiobenzylnickel complex/sensitizer as an optical absorbent.

The addition of Kawauchi and/or Satake fails to remedy the shortcomings of the combination of RD 39219 and JP 58-008357. Specifically, the combinations of RD 39219 and JP 58-008357 with one or both of Kawauchi and Satake fails to teach or suggest extremely fast development times as required by the currently pending claims, nor do the combinations teach a composition configured to have a specific sensitivity, as required by the claims, either directly or inherently. This fast development time is specifically related a color forming composition configured for development in less than about 1 msec when exposed to about 30 -- 50 mW IR at a spot size from about 1 -- 200 micrometers. As the combinations fail to teach each and every element of the claims, *a prima facie* case has not been presented and removal of the rejection is respectfully requested.

Rejections based on RD 39219 and JP 58-008357 in view of Fleming '536 and Anderson

Claims 1, 4-10, 12-15, 17, 20-22, 24, 25, and 39-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over the noted combinations of references. Fleming is directed to a recordable optical element including a dye. **Abstract.** The dye is a leuco dye which, upon exposure to a thermally-generated acid, becomes an absorption dye. **Abstract.** Anderson is directed to a recording and labeling system. **Title.** The system includes recording write data with a digital recorder on the read/write surface of the CD/DVD, and recording image data by

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inducing visible color change with a laser in laser sensitive materials on the opposite surface of the CD/DVD. Abstract.

The addition of Fleming '536 and Anderson fails to remedy the shortcomings of the combination of RD 39219 and JP 58-008357. Specifically, the combinations of RD 39219 and JP 58-008357 with Fleming '536 and Anderson fails to teach the sensitivity of the composition. The composition is configured for such sensitivity, as required by the claims, either directly or inherently, which is specifically a color forming composition configured for development in less than about 1 msec when exposed to about 30 -- 50 mW IR at a spot size from about 1 -- 200 micrometers. As the combinations fail to teach each and every element of the claims, a *prima facie* case has not been presented and removal of the rejection is respectfully requested.

Rejections based on RD 39219 and JP 58-008357 in view of Fleming '536 and Anderson in further view of Boggs

Claims 1, 4-15, 17, 20-25, and 39-41 were rejected under 35 U.S.C. 103(a) as unpatentable over the noted combination of references. Boggs is directed to thermal imaging methods and materials. Title. The thermal imaging systems of Boggs include leuco dyes. Abstract. Boggs was cited by the Examiner primarily to supply additional binders useful with leuco dyes.

Such combination fails for the same reasons as the previous combinations. Again, the combination of references fails to teach the sensitivity of the composition. The claimed composition is configured for such sensitivity, which is specifically a color forming composition configured for development in less than about 1 msec when exposed to about 30 -- 50 mW IR at a spot size from about 1 -- 200 micrometers. Furthermore, the chemical arts are generally considered unpredictable, particularly in dealing with reactions of components of a composition.

While Boggs may lead one skilled in the art to combine leuco dyes with the binders disclosed in Boggs within the context of Boggs, the Examiner has provided inadequate motivation and/or apparent reason why one skilled in the art would take Boggs' teachings as implying the binder usefulness as the Examiner has proposed. As the combination fails to teach each and every element of the claims, a *prima facie* case has not been presented and removal of the rejection is respectfully requested.

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Rejections based on RD 39219 and JP 58-008357, combined with Fleming '536 and Anderson in view of either Perkins or Fleming '704

The addition of Perkins or Fleming '536 fails to remedy the shortcomings of the combination of RD 39219 and JP 58-008357 with Fleming '536 and Anderson. Specifically, the combination fails to teach the sensitivity of the composition, where the composition is configured for such sensitivity, as required by the claims, either directly or inherently. Specifically, the color forming composition is configured for development in less than about 1 msec when exposed to about 30 – 50 mW IR at a spot size from about 1 – 200 micrometers. As the combinations fail to teach each and every element of the claims, a *prima facie* case has not been presented and removal of the rejection is respectfully requested.

Rejections based on RD 39219 and JP 58-008357, combined with Fleming '536, and Anderson and either Perkins or Fleming '704, further in view of Gravsteijn and Melles Griot Catalog (1995/96) pp. 49-4 through 49-5

Gravsteijn and the Melles Griot Catalog were cited to provide further insight into lasers. Still, the combination fails for the same reasons as the basic combination. Simply, the combination fails to teach a composition configured for a specific sensitivity, as required by the claims. Such teaching is not present either directly or inherently, which is specifically a color forming composition configured for development in less than about 1 msec when exposed to about 30 – 50 mW IR at a spot size from about 1 – 200 micrometers. As the combinations fail to teach each and every element of the claims, a *prima facie* case has not been presented and removal of the rejection is respectfully requested.

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CONCLUSION

In light of the above, Applicant respectfully submits that pending claims 1-25, 33-36, and 38-41 are in condition for allowance. Therefore, Applicant requests that the rejections and objections be withdrawn, and that the claims be allowed and passed to issue. If any impediment to the allowance of these claims remains after entry of this Amendment, the Examiner is encouraged to call Gary Oakeson at (801) 566-6633 so that such matters may be resolved as expeditiously as possible.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 08-2025.

DATED this 22nd day of September, 2008.

Respectfully submitted,



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